

SOME NEW CALIFORNIA SIPHONAPTERA

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For the past three summers the writer has had the pleasure of working with Dr. R. L. Rutherford, School of Dentistry, University of Southern California, on a survey of parasites of small mammals and birds collected in the Central High Sierra mountain range of California. Of the many interesting ectoparasites collected there are three fleas apparently new to science that are here described and illustrated, besides the allotype of one already known species.

Family PULICIDAE

Callistopsyllus deuterus Jordan 1937

Allotype Male

HEAD: Frontal notch prominent, peg-like; eye absent; pre-antennal region with two rows of bristles, an upper row of four medium bristles, a lower with four very long bristles; maxillae acuminate; labial palpi three-fifths the length of the fore-coxa; postantennal region with one row of two bristles of medium size, and one longer bristle between this row and posterior antennal groove.

THORAX AND ABDOMINAL SEGMENTS: Pronotal ctenidium of sixteen slender spines; first abdominal tergite with eight small teeth, second with four, third with two; three antepygial bristles, the middle twice the length of the outer and three times the length of the inner; tergite VIII reduced to a short cone-shaped structure with a few scattered bristles; finger large, protruding well beyond rest of genitalia, two short, well separated spiniforms at apex; sternite IX with upper posterior portion blade-like, the upper outer margin well covered with setae; sternite VIII vestigial, a wing-like, weakly chitinized, veined structure remaining.

LEGS: Tarsus V of all legs with five pair of lateral plantar bristles, the first pair dislocated mediad between the second pair; coxae without inner bristles.

Allotype: A male, collected by Rutherford, 8/10/41, at Mammoth Lakes, Mono County, California, from *Peromyscus maniculatus sonoriensis* (Le Conte). Deposited in the Los Angeles County Museum, Los Angeles, California.

Paratypes: 6 males, retained by writer, host listings and other data to follow in a later report.

Remarks: The writer wishes to thank Dr. C. A. Hubbard for his original aid in the diagnosis of this interesting parasite.

Family DOLICHOPSYLLIDAE
Monopsyllus eutamiadis n. sp.
Holotype Female

HEAD: Frontal notch present, small, acuminate; preantennal region with two rows of bristles, four small bristles in the upper row, three much longer bristles in the lower row; four small setae above the eye along the antennal groove; maxillae sharply acuminate; genal process short, somewhat heavily chitinized; labial palpi equal in length to fore-coxa; eye large, darkly pigmented; postantennal region armed with three bristles along the antennal groove, the middle bristles much longer than the other two; a row of small setae along the posterior margin of the antennal groove.

THORAX AND ABDOMINAL SEGMENTS: Pronotal ctenidium of sixteen rather sharply pointed spines; first three abdominal tergites with four small teeth, fourth with three; three antepygidial bristles, the middle twice the length of the equal outer and inner bristles; style short, thick, one-and-one-half times longer than its greatest width, one long terminal bristle, two shorter, lateral bristles; sternite VII very diagnostic, a deep sinus high in the free margin forming an acute upper lobe, fixed margin with numerous bristles, seven long bristles in the posterior row, and twelve smaller ones immediately anterior; spermatheca sausage-shaped, slender.

LEGS: Tarsi and rest of legs as in other members of the genus.

Allotype Male

HEAD: Frontal notch as in female but much higher up on the frontal angle; chaetotaxy of preantennal and postantennal regions as in female; palpi, eye, and maxillae as in female.

THORAX AND ABDOMINAL SEGMENTS: Pronotal ctenidium of sixteen pointed spines; two small teeth on upper posterior angle of metanotum, four on first four abdominal tergites, and three on the fifth; a single long antepygidial bristle; tergite VIII sharply rounded on its dorso-posterior angle, with seven bristles on the same area and two in the ventro-posterior area; clasper slender, half-moon shaped with a long, thumb-like process falling

slightly short of the total length of the finger; the finger very diagnostic, with three spineforms as in *M. eumolpi* but without the concave anterior margin; sternite IX with a single lobe on the ventral portion of the free arm, the upper portion long, slender; sternite VIII long, finger-like as in *M. eumolpi* but with smaller and fewer bristles along its lateral margin, and two terminal bristles.

LEGS: Tarsi and rest of legs as in other members of the genus.

Holotype: A female, collected by Rutherford and Augustson, 8/27/41, at Cascade Valley, Fresno County, California, from *Eutamias quadrivittatus inyoensis* Merriam. Deposited in the Los Angeles County Museum, Los Angeles, California.

Allotype: A male, collected and deposited as above.

Paratypes: 3 females, 2 collected as above, 1 by Augustson, 7/22/41, at Mammoth Lakes, Mono County, California, from *Eutamias quadrivittatus inyoensis* Merriam. All retained by writer.

Type Host: *Eutamias quadrivittatus inyoensis* Merriam.

Type Locality: Cascade Valley, Fresno County, California.

Remarks: This new species is closely related to the *M. eumolpi* group and perhaps should be referred to subspecific rank within this group. The writer bases his specific diagnosis on sternite VII of the female and shape of the clasper and finger in the male. The species name is derived from *Eutamias*, which appears to be the normal host of this parasite.

Family HYSTRICHOPSYLLIDAE

Catallagia rutherfordi n. sp.

Holotype Female

HEAD: Frontal notch prominent, peg-like; preantennal region with two rows of bristles, the upper with six small bristles, the lower with three very long bristles, a small bristle situated immediately above the eye between the two rows; eye vestigial as in other members of the genus; maxillae acuminate; genal process short, sharp; labial palpi slightly shorter than fore-coxa, postantennal region with two rows of bristles with five in each row of uniform size except the most proximal to the antennal groove in the lower row which is very much larger and longer; three small setae only along the posterior margin of the antennal groove.

THORAX AND ABDOMINAL SEGMENTS: Pronotal ctenidium of twelve bluntly pointed spines; first abdominal tergite with four small teeth, second with five, third with four, fourth with two; three antepygidial bristles, the middle one-third longer than the outer and one-half longer than the inner; style slender, tapering base to tip, length equal to two-and-one-half times its greatest width, one stout terminal bristle, one much smaller lateral bristle immediately below; sternite VII as in *C. decipiens* but with a deeper sinus forming a more acute lobe on the free margin; bursa copulatrix roughly "S" shaped; spermatheca as in *C. decipiens* and related species but somewhat narrower, and with the neck of the appendix extending much deeper into the body.

LEGS: Tarsi and rest of legs as in other members of the genus.

Allotype Male

HEAD: Frontal notch in same position and shape as in female; eye, maxillae, palpi, and chaetotaxy of head as in female.

THORAX AND ABDOMINAL SEGMENTS: Pronotal ctenidium of twelve spines as in female; first abdominal tergite with two small teeth, second with four, third with two, fourth with two; three antepygidial as in female; modified abdominal segments composing genitalia as in other members of the genus except sternite IX, this structure with four stout, black teeth at its apex, the most terminal very blunt, spatulate, twice as thick as the pointed, lower three, immediately below a cluster of bristles of three long, medial, and four much smaller outer.

LEGS: As in other members of the genus.

Holotype: A female, collected by Rutherford and Augustson, 8/15/14, at Tully's Hole, Fresno County, California, from *Microtus montanus dutcheri* Bailey. Deposited in the Los Angeles County Museum.

Allotype: A male, collected by writer, 8/14/40, at Mammoth Lakes, Mono County, California, from *Peromyscus maniculatus sonoriensis* (Le Conte). Deposited as above.

Paratypes: 2 females, 1 male collected by Rutherford, 6/1/41, at Mammoth Lakes, Mono County, California, from *Peromyscus maniculatus sonoriensis* (Le Conte). All retained by writer.

Type Host: *Microtus montanus dutcheri* Bailey.

Type Locality: Tully's Hole, Fresno County, California.

Remarks: This new species is named in honor of Dr. R. L. Rutherford, to whom the writer is greatly indebted for many fine collecting opportunities.

Phalacropsylla monticola n. sp.

Holotype Female

HEAD: Frontal notch absent; preantennal region with two rows of bristles, the upper of four small bristles, the lower with four much larger; eye absent, its normal position somewhat darkly chitinized; genal comb consisting of two unequal, overlapping, furrowed teeth, the upper shorter and broader than the lower; genal process blunt, not prominent; maxillae very long, sharply acuminate; labial palpi equal in length to fore-coxa; post-antennal region with one row of three bristles, the middle much longer and more proximal to the posterior antennal groove than the other two; a row of small setae along the posterior antennal groove; second segment of antenna with a row of short bristles not exceeding third section of club.

THORAX AND ABDOMINAL SEGMENTS: Pronotal ctenidium of twelve, long, rather bluntly pointed spines; first two abdominal tergites with two small teeth on each; three antepygial bristles, the middle one-fourth longer than the outer and two-thirds longer than the inner; style slender, tapered, with one, long terminal bristle and two rather large bristles immediately below in a descending order; sternite VII with a deep sinus between lobes of equal length but unequal shape, the upper terminating abruptly in a downward, rounded end, the lower ending sharply, ventral fixed portion with two rows of bristles, the posterior row with four long bristles, the anterior row with seven small bristles; spermatheca small, pear-shaped, the appendix slender, curved half-way down body; bursa copulatrix only slightly angulate.

LEGS: All tarsi V with five pairs of lateral plantar bristles with the first pair dislocated mediad between the second pair; hind-coxa with a number of scattered, thin, medium length setae, and a patch of much shorter setae, in the inner apical anterior half.

Allotype Male

HEAD: No frontal notch; genal comb, maxillae, labial palpi chaetotaxy as in female.

THORAX AND ABDOMINAL SEGMENTS: Pronotal ctenidium as in female; abdominal tergite one with two small teeth, two with three, three with two; three antepygial bristles, the middle

one-half longer than the outer and two-thirds longer than the inner; tergite VIII with its upper margin freely covered with bristles, postero-dorsal angle acutely rounded; finger arm-like, rounded at its apex, extending ventrally beyond its insertion, scattered setae along the outer margin; clasper large, process protruding well above insertion of finger, no acetabular bristles; sternite IX paddle-shaped in its free posterior portion, the upper end flattened on top, bulging laterally with a cluster of twelve very stout, medium length bristles in the upper posterior margin, midway below a row of various sized setae on the lateral margin; sternite VIII absent; sternite VII slanted upward giving the entire posterior end a cone-shaped arrangement.

LEGS: Tarsi and rest of legs as in female.

Holotype: A female, collected by Rutherford and Augustson, 8/23/41, at Tully's Hole, Fresno County, California, from *Ochotona schisticeps muiri* Grinnell and Storer. Deposited in the Los Angeles County Museum, Los Angeles, California.

Allotype: A male, collected and deposited as above.

Type Locality: Tully's Hole, Fresno County, California.

Remarks: The distinguishing features of this new species from *P. paradisea* is most evident in sternite VII of the females; in the latter the sinus is shallow, the upper lobe being much more prominent than the lower. The males differ principally in the number and arrangement of the upper bristles of sternite IX.

EXPLANATION OF PLATE 16

(See page 146)

- Fig. 1. *Monopsyllus eutamiadis* Aug., genitalia, allotype male.
Fig. 2. *Monopsyllus eutamiadis* Aug., sternite VII, spermatheca, holotype female.
Fig. 3. *Callistopsyllus deuterus* Jord., genitalia, allotype male.
Fig. 4. *Phalacrocylla monticola* Aug., sternite VII, bursa copulatrix, spermatheca, holotype female.
Fig. 5. *Catallagia rutherfordi* Aug., sternite VII, bursa copulatrix, spermatheca, holotype female.
Fig. 6. *Catallagia rutherfordi* Aug., sternite IX, allotype male.
Fig. 7. *Phalacrocylla monticola* Aug., head, allotype male.
Fig. 8. *Phalacrocylla monticola* Aug., genitalia, allotype male.



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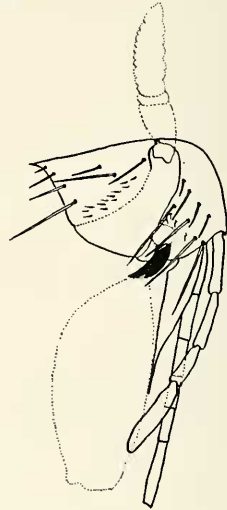
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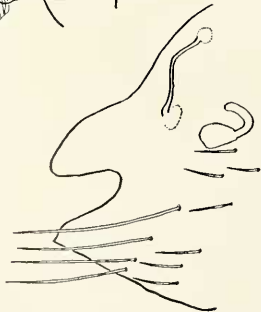
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PLATE 16